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January 15, 2009

To: Environmental Protection Agency
Cincinnati Procurement Operations Division
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Attention: Ms. Tammy A. Thomas
Contract Officer

From: Patrick Merritt
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Subject: Monthly Progress Report for Work Assignment 1-09, EPA Contract EP-C-07-028, under SwRI Project 03.14175.09, SwRI Proposal No. 03-54043.

Contract Title: "Testing and Related Support for Energy Bill-Mandated Activities"

Assignment Title: "Comprehensive Gasoline Light Duty Exhaust Fuel Effects Test Program to Cover Multiple Fuel Properties and Two Ambient Test Temperatures, Interim Testing"

1.0 INTRODUCTION

Section 1506 of the Energy Policy Act of 2005 (Energy Act) requires EPA to produce an updated fuel effects model representing the 2007 light duty gasoline fleet, including determination of the emissions impacts of increased renewable fuel use. The use of ethanol in gasoline has increased more than five-fold since 2000, and it is likely that its use will continue to expand into the next decade. It is also likely that use of high-level blends such as E85 will expand significantly.

Additionally, recent investigation related to the Mobile Source Air Toxics (MSAT2) rulemaking has shown that hydrocarbon emissions from light duty gasoline vehicles increase significantly as test temperature is decreased. As a result, the MSAT2 rulemaking promulgated NMHC standards at 20°F. However, this being a relatively new area of study, fuel effects data at temperatures lower than 72°F are scarce for use in emissions models.

Hydrocarbon (HC) emissions are composed of hundreds of compounds, some of which have been identified by the EPA as air toxics. The Clean Air Act directs EPA to set standards to reduce air toxics emissions. Most existing data on the fractional relationship between the various air toxics and HC emissions has been established using vehicles meeting Tier 0 emissions standards (now more than 10 years old), and burning fuels that did not contain ethanol.

To help EPA develop a better understanding of the impact of ethanol fuel blends on light duty vehicle emissions, Southwest Research Institute (SwRI®) is conducting Work Assignment 1-09, "Comprehensive Gasoline Light Duty Exhaust Fuel Effects Test Program to Cover Multiple Fuel Properties and Two Ambient Test Temperatures, Interim Testing". This WA is for FTP tests to be performed on a subset of 6 vehicles from the fleet of 19 for the EPAct program. This report constitutes SwRI's monthly progress report for Work Assignment 1-09.

2.0 PROGRESS TO DATE

SwRI has completed FTP testing on the subset of six vehicles from the fleet of nineteen used in the EPAct program. Those vehicles are shown in Table 1.

TABLE 1. TEST VEHICLES FOR WA 1-09

MAKE	YEAR	BRAND	MODEL	ENGINE	FAMILY	T2 BIN	NOTE
GM	2008	Chevrolet	C1500 Silverado	5.3L V8	8GMXT05.3373	5	FFV
Toyota	2008	Toyota	Camry	2.4L I4	8TYXV02.4BEA	5	
Ford	2008	Ford	Focus	2.0L I4	8FMXV02.0VD4	4	
Chrysler	2008	Dodge	Caravan	3.3L V6	8CRXT03.3NEP	8	FFV
Honda	2008	Honda	Accord	2.4L I4	8HNXV02.4TKR	5	
Nissan	2008	Nissan	Altima	2.5L I4	8NSXV02.5G5A	5	

Two additional vehicles on loan from CRC will undergo testing in the future, in conjunction with Phase 3 of the EPAct program. Those vehicles are shown in Table 2.

TABLE 2. CRC TEST VEHICLES

MAKE	YEAR	BRAND	MODEL	ENGINE	FAMILY	T1
Honda	1999	Honda	Accord	2.3L	XHNXV02.3PA3	NLEV
Toyota	2001	Toyota	Corolla	1.8L	1TYXV01.8FFA	NLEV

3.0 MAJOR PROBLEM AREAS

None.

4.0 FINANCIAL STATUS AND ADMINISTRATIVE MATTERS

As of January 12, 2009, cumulative cost and fee totaled Ex. 4 - CBI, which is Ex. 4 - CBI of project funds. Cumulative technical hours numbered Ex. 4 - CBI which represents Ex. 4 - CBI of hours budgeted. On the most recent invoice, dated December 19, 2008, cumulative hours numbered Ex. 4 - CBI and costs totaled Ex. 4 - CBI Should you have any comments or questions, please contact Patrick Merritt by phone at 210-522-5422 or by e-mail at pmerritt@swri.org.

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